

# U.S. Army Center for Health Promotion and Preventive Medicine

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## A SOLDIER'S GUIDE TO STAYING HEALTHY IN CARIBBEAN ISLANDS

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### INTRODUCTION

This country-specific guide should be used in conjunction with [GTA 08-05-062, \*Guide to Staying Healthy\*](#), and is intended to provide information that can help reduce your risk of Disease and Non-battle Injuries (DNBI) when deployed. This health threat and countermeasure information is based on the most current data available from U.S. Department of Defense medical agencies at the time of production. In addition to the information in this guide, you should also receive force health protection, health threat, and preventive medicine countermeasures training/briefings prior to and, as required, throughout the length of your deployment.

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## CARIBBEAN ISLANDS OVERVIEW

The Caribbean Islands are composed of [Antigua](#), [The Bahamas](#), [Barbuda](#), [Bermuda](#), [Cuba](#), [Dominica](#), [Grenada](#), [Jamaica](#), [Martinique](#), [Netherlands Antilles](#), [Puerto Rico](#), [Saint Lucia](#), [Trinidad and Tobago](#), and the [Virgin Islands](#); as well as some other islands, nations, and territories in the Caribbean Basin, located between 10° and 26° north latitude. The Caribbean Islands extend in a large arc from the Yucatan Peninsula of Mexico and the Florida Peninsula to the northeastern coast of Venezuela. Cuba is the largest island nation with 42,803 square miles, which is slightly smaller than Pennsylvania. The smallest island territory is [Anguilla](#) with 37 square miles, which is about half the size of Washington, DC. Rolling hills and valleys are typical on many islands. These hills tend to be composed of limestone, coral, shale, and volcanic formations. All islands have elevations less than 5,000 feet above sea level, except for Cuba and Jamaica. All islands have tropical or subtropical climates that are usually moderated by trade winds or ocean currents. Temperatures typically range from 72° F to 86° F with little seasonal variation. It is very humid year-round. Average rainfall is 57 inches per year with most rain falling between May and October. Natural hazards include hurricanes and tropical storms from June through November. The eastern edge of the Caribbean is composed of a ring of mostly dormant volcanic islands. Droughts can be severe in limited areas, although heavy rains can cause local flash floods and landslides. Occasional earthquakes occur on a few islands.

## CARIBBEAN ISLANDS RISK ASSESSMENT

Based on a combination of all major infectious diseases that occur in a country, an overall country risk level is assigned as low, intermediate, high, or highest risk. All the countries in this region are INTERMEDIATE RISK for infectious diseases. Environmental contamination may present short- and long- term health risks to personnel deployed to the Caribbean.

The greatest short-term health risks are associated with insects and water contaminated with raw sewage or runoff containing fecal pathogens, industrial waste, or agricultural chemicals. The greatest long-term health risks are associated with sexually transmitted diseases and air contamination localized near urban and industrial areas.

This guide discusses specific disease and environmental risks and ways to eliminate or lessen those risks.

## DISEASES OF GREATEST RISK

Bacterial and protozoal diarrhea (travelers' diarrhea) are food- or water-borne diseases. They are contracted when you eat contaminated food or drink contaminated water, ice or milk. The risk of contracting diarrhea exists year-round.

[Dengue fever](#) is a serious disease contracted from the bite of a mosquito that is carrying the virus. The risk of contracting dengue fever exists all year but is higher during May

through October when it is warm and wet. You can contract the disease anywhere in the country, but your risk is highest in urban areas. Infected mosquitoes often breed in containers of water. Do not allow open containers of water to sit for a long time.

[Hepatitis A](#) is a food- or water-borne disease that can make you sick for a month or more. Hepatitis A is contracted when you eat contaminated food or drink contaminated water, ice, or milk. The risk of contracting hepatitis exists year-round. Receiving the hepatitis A vaccine can eliminate the risk of contracting hepatitis A.

[Leptospirosis](#) is a serious illness contracted when you come into contact with water that is contaminated with the bacteria that causes the disease. The risk of contracting leptospirosis exists year-round in all areas. The risk of acquiring leptospirosis can be greatly reduced by not swimming or wading in water that might be contaminated with animal urine.

[Typhoid/paratyphoid fever](#) is a serious illness contracted from consuming food or water contaminated with the bacteria that causes the disease. The risk of contracting typhoid/paratyphoid fever exists year-round, but your risk is highest between November and March. Typhoid/paratyphoid fever is present in all areas. Receiving the typhoid vaccine can eliminate the risk of contracting the disease.

Information pertaining to how to prevent these and other diseases can be found under each disease category.

## **VECTOR-BORNE DISEASES OF POTENTIAL RISK**

### **DISEASE RISKS**

Diseases of potential risk that are caused by insect bites exist. These diseases include [leishmaniasis](#) from sand flies and [malaria](#) from mosquitoes. There may be other diseases spread by various insects and ticks. Your local medical authority will determine if these diseases or other vector-borne diseases are a threat in your specific location and provide appropriate countermeasures.

### **PREVENTION**

When deployed to this region, use the [DOD Insect Repellent System](#) detailed in [GTA 08-05-062](#) to reduce your risk of acquiring a vector-borne disease.

Wear [permethrin](#)-treated uniforms with trousers tucked into boots, sleeves rolled down, and undershirt tucked into trousers. Wear N-diethyl-meta-toluamide (DEET) on exposed skin.

When deployed to this region, [sleep under a permethrin-treated bed net](#) to repel insects and further reduce risks of vector-borne diseases.

When using both DEET and sunscreen products, apply sunscreen to the skin first so it does not interfere with the effectiveness of the DEET. After 30 minutes to an hour, apply the DEET. This allows the sunscreen to penetrate and bind to the skin first.

Take your malaria prevention pills when directed to do so. This is CRITICAL. Normally, you will begin taking medication prior to arriving in the area, while in the area, and after returning home.

## **FOOD-BORNE AND WATER-BORNE DISEASES**

### **DISEASE RISKS**

Significant shortage of potable drinking water is a serious problem in many areas due to expanding populations and agricultural demands. Poor sanitation and contamination of drinking water and food are common. The release of raw sewage is the main cause of water contamination throughout the region. In addition to diarrhea, hepatitis and typhoid/paratyphoid fever, other diseases of potential military importance to forces deployed to this region include [cholera](#), [hepatitis E](#) and [brucellosis](#), all acquired by consuming contaminated food, water, and dairy products. Recurrent algal blooms in Caribbean coastal waters result in contamination of reef fish (e.g., snapper, grouper, etc.) with neurotoxins that cause [ciguatera](#) poisoning. Symptoms can be severe and last for as long as several months. Cooking does not destroy the toxin.

### **PREVENTION**

Assume all non-approved food, ice, and water is contaminated. You should not drink local tap water, fountain drinks or ice cubes. Do not eat any food or drink any water or beverages (including bottled water) that has not been approved by the U.S. military as they may be contaminated. Even a one-time consumption of these foods or water may cause severe illness. See [GTA 08-05-062](#) for appropriate countermeasures.

## **WATER-CONTACT DISEASES AND SKIN DISEASES**

### **DISEASE RISKS**

In addition to [leptospirosis](#), another disease of potential military importance that is contracted from swimming, wading, or other skin contact with contaminated water is [schistosomiasis](#). Skin irritations and infections, such as athlete's foot and ringworm, are common medical threats during any deployment and are commonly caused by fungi that thrive in moist conditions.

### **PREVENTION**

Do not swim or wade in water that has not been treated with chlorine. Wear protective clothing or footwear when you must be exposed to contaminated water

or soil. To prevent skin infections, keep your skin clean and dry. See [GTA 08-05-062](#) for additional countermeasure information.

## **ANIMAL-CONTACT DISEASES**

### **DISEASE RISKS**

Diseases contracted through contact with animals that are of potential military significance include [rabies](#), [anthrax](#) and [Q fever](#). They are serious illnesses that you contract from being bitten by an infected animal (rabies), touching or eating infected animals (anthrax), or inhaling dust that contains the organisms that cause the disease (Q fever, anthrax). Cats, dogs, bats and the mongoose are the main carriers of rabies, but any animal can be infected with rabies. Cattle, sheep and goats are the main carriers of anthrax and Q fever.

### **PREVENTION**

Avoid contact with all animals. If bitten, seek medical attention immediately. Keep living quarters free of rodents and stay clear of buildings infested with rodents. In addition, always check dug-in fighting positions for potentially dangerous animals.

## **DANGEROUS ANIMALS AND PLANTS**

### **RISKS**

Highly poisonous snakes, including the bushmaster, coral snakes, vipers, and rattlesnakes, live in the region. Although many islands have no venomous snakes, consider any snake encountered in the region as poisonous, and do not handle. Spiders, scorpions, and centipedes can be very large in size and are capable of inflicting painful bites/stings. Some spiders and scorpions in this region have venom that can be fatal. Some caterpillars have stinging hairs that can cause skin irritation or rashes. Africanized honeybees are present throughout the region and represent a potential life-threatening hazard due to their aggressive behavior when defending their nests.

Dangerous animals present in coastal waters include the Portuguese man-of-war, stingrays, several types of poisonous fish, stinging anemones and jellyfish, crocodiles and caimans, as well as sharp corals.

Some regional plants have thorns, stinging hairs, or toxic resins that may puncture the skin or introduce poison into the skin causing skin irritation, rashes or infections. Contact with the smoke from the burning of harmful plants can also cause skin rashes

and damage to your lungs. Some regional plants may cause systemic poisoning if leaves, berries, flowers, or other plant parts are chewed or swallowed.

### PREVENTION

Seek immediate medical attention if bitten or stung; untreated snakebites may cause serious illness or death within 1 hour.

If possible, avoid sleeping on the ground. Shake out boots, bedding, and clothing prior to use, and never walk barefoot.

Avoid skin contact with plants when tactically feasible. Clean your skin and clothing by washing with soap and water after contact with harmful plants.

## CONTAGIOUS AND SEXUALLY TRANSMITTED DISEASES

There is a risk of being exposed to the bacteria that causes [tuberculosis](#) (TB). Breathing in the bacteria that someone coughed or sneezed into the air spreads TB. Being exposed to the bacteria will cause a positive skin test even if you do not become sick. If you have a positive skin test, you may still be treated even if you have no symptoms. [Sexually transmitted diseases](#), such as [gonorrhea](#), [chlamydia](#), [human immunodeficiency virus \(HIV\)](#)/acquired immune deficiency syndrome (AIDS) and [hepatitis B](#), occur throughout the region. Though the immediate impact of HIV/AIDS and hepatitis B on an operation is limited, the long-term impact on your individual health is substantial. Those deployed should see [GTA 08-05-062](#) for appropriate countermeasures and guidance regarding the hepatitis B vaccine. **Anyone deployed to the region should not have unprotected sex and should not share needles.**

## HOT AND COLD WEATHER INJURIES

Temperature extremes in this region may impact military operations. Heat injuries are possible, especially in individuals not acclimatized to warmer temperatures. Heat injury is most likely to occur during the early phase of deployment; acclimatization is critical. The effects of cold weather are more severe in high mountainous areas due to reduced oxygen and lower air pressure. When deploying to the mountainous regions of the Caribbean Islands, check with your unit on the requirement for packing the extended cold weather clothing system. See [GTA 08-05-062](#) for appropriate countermeasures.

## TOXIC INDUSTRIAL CHEMICALS AND MATERIALS

When deployed, you may face health risks from industrial chemicals and materials as a result of activities by terrorists or warring parties; accidents related to improper design, maintenance, or operation of indigenous industrial facilities; inadvertent exposure to toxic waste materials in the environment; or improper handling or disposal of hazardous material with which our own forces deploy. Food items heavily contaminated with



insecticides have led to serious illness and death in Cuba. The degree of health risks depends upon many factors. Consult your medical authority for additional information.

## **FIELD SANITATION TEAM**

Each company-sized unit has a Field Sanitation Team (FST) whose members are trained (40-hour course) and fully equipped IAW [AR 40-5](#), [FM 4-25.12](#), and [FORSCOM REG 700-2](#). Know who the members of your FST are, and know how they can assist in preventing medical threats to your health. Become familiar with FST equipment and training.

## **HIGH ELEVATIONS**

Military operations occurring at elevations over 6,000 feet can seriously affect unit and individual effectiveness. Serious illness or death can result if you increase your elevation rapidly without allowing for acclimatization. Remain well hydrated; individual water requirements are greater at higher altitudes.

When deployed to high mountain areas, look for the common symptoms of mountain sickness: headache, nausea, vomiting, dizziness, fatigue, irritability, and coughing. Seek medical attention immediately if you experience any of these symptoms.

Pyridostigmine bromide tablets may increase the chance of dizziness or fainting during the first 24 hours at high altitude if you are not acclimatized.

Lower oxygen levels at high altitudes ("thin air") combined with the heavier work requirements when wearing mission-oriented protective posture (MOPP) gear can increase your risk of high altitude illnesses. When wearing MOPP gear at higher altitudes, you may require more time and concentration to perform assigned tasks.

For appropriate countermeasures during high altitude operations, see [GTA 08-05-062](#) and [GTA 08-05-060, \*A Soldier's Guide to Staying Healthy at High Elevations\*](#).

## **HEARING PROTECTION**

It is essential that you use properly fitted [hearing protection](#) during military operations. Exposure to high-intensity noise may cause hearing loss that can adversely affect your combat effectiveness and individual readiness. Good hearing is essential to mission success. If you are a dismounted soldier, the [Combat Arms Earplug](#) (NSN 6515-01-466-2710) will protect you from the impact noise of weapons fire while only slightly interfering with voice communications and detection of combat sounds such as vehicle noise, footfalls in leaves, and the closing of a rifle bolt. While not as effective as the



Combat Arms Earplug in preserving your ability to hear important mission-related sounds, noise muffs or standard earplugs are very effective at preventing noise-induced injury. If you are a member of vehicle or helicopter crews, your combat vehicle crew or aircrew helmets have built-in hearing protectors.

## **ORAL HEALTH**

Dental disease is a common problem during deployments due to the challenge of maintaining good oral hygiene. You should deploy with toothbrush, dental floss, and fluoride toothpaste. Daily flossing and twice daily brushing of teeth is the best way to prevent dental disease and to decrease your risk of problems such as trench mouth and tooth decay. In difficult tactical environments, teeth should be brushed at least once a day. Seek medical attention immediately if you experience any dental problems.

## **PRE-DEPLOYMENT HEALTH INFORMATION**

- Complete the Pre-Deployment Health Assessment (DD FORM 2795) to assess your state of health before deployment and to assist health care providers in identifying your medical needs and providing present and future medical care to you.

You will not have access to your health care record during the deployment. The Adult Preventive and Chronic Care Flowsheet (DD FORM 2766) will be used as your deployment health record. This document will include information on all your immunizations, any medications you are currently taking, and any ongoing medical problems that you may have. When you go through readiness processing, ensure that all appropriate information is documented on your DD FORM 2766. When you return home, this information will be placed in your regular health record.

## **INFORMATION ABOUT YOUR HEALTH CARE WHILE DEPLOYED**

It is important that you know where to seek health care while deployed. This may or may not be through the same channels as your home station. Ask your chain of command for more information.

While deployed, you must maintain your health and seek care whenever an illness or injury threatens your ability to complete your tasks. Your unit is depending on you. It is always better to seek care early so that your problems can be documented appropriately and taken care of immediately. Early treatment also helps to prevent the spread of disease to others in your unit.

## **POST-DEPLOYMENT HEALTH INFORMATION**

Complete the Post-Deployment Health Assessment (DD FORM 2796) to assess your state of health after deployment and to assist health care providers in identifying your medical needs and providing present and future medical care to you.

If you become sick after you return home, tell your physician that you were deployed.

Complete any medications as directed, and receive follow-on medical care/tests as directed.

**Contact your Preventive Medicine or Medical Support Unit for more information.**



*Prepared by:*

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